

Appendix I

Glossary

Section I. Acronyms

A2C2	Army airspace command and control
AAA	antiaircraft artillery
AAGS	Army air-ground system
AAM	air-to-air-missile
ACA	airspace coordination area, also airspace control authority
ACE	aviation combat element
ACT	actual time
AFLNO	Air Force liaison officer
AGL	above ground level
AGM	air-to-ground missile
AIO	air intelligence officer
AIRSUPREQ	air support request
ALLTV	advanced low-light television
AM	amplitude modulation
AMC	air mission commander
AO	air officer
AOA	amphibious objective area
AOC	air operations center (USAF)
AR	attack route, also aerial refueling
AREC	air resource element coordinator
ASAP	as soon as possible
ASC(A)	assault support coordinator (airborne)
ASCS	air support control section
ASOC	air support operations center

ATACS	amphibious tactical air control system
ATCS	air traffic control section
ATF	amphibious task force
ATO	air tasking order
AWC	air warfare commander
BCD	battlefield coordination detachment
BDA	battle damage assessment
BIT	built-in test
BP	battle position
C2	command and control
C4I	command, control, communications, computers, and intelligence
C2W	command and control warfare
CAS	close air support
CATF	commander, amphibious task force
CBU	cluster bomb unit
CEOI	communications-electronics operating instructions
CEP	circular error probable
CFL	coordinated fire line
CID	combat identification
CLF	commander, landing force
COA	course of action
CP	contact point
CRC	control and reporting center
CTOC	corps tactical operations center
CV	aircraft carrier
DASC	direct air support center
DASC(A)	direct air support center (airborne)
DF	direction funding
EA	electronic attack
ECP	egress control point
EMCON	emission control
EO	electro-optical
EOTDA	electro-optical tactical decision aid

EP	entry point/exit point
ERP	en route point
EST	estimated time
EW	electronic warfare
FAC	forward air controller
FAC(A)	forward air controller (airborne)
FAE	fuel-air explosive
FARP	forward arming and refueling point
FDC	fire direction center
FEBA	forward edge of the battle area
FEZ	fighter engagement zone
FFA	free-fire area
FFAR	folding-fin aircraft rocket
FFC	force fires coordinator
FFCC	force fires coordination center
FIST	fire support team
FLIR	forward-looking infrared
FLOT	forward line of own troops
FM	frequency modulation
FMFM	Fleet Marine Force manual
FMFRP	Fleet Marine Force reference publication
FO	forward observer
FOB	forward operating base
FOD	foreign object damage
FP	firing point
FRAGO	fragmentary order
FSC	fire support coordinator
FSCC	fire support coordination center
FSCL	fire support coordination line
FSCM	fire support coordination measure
FSE	fire support element
GBU	guided bomb unit
GCE	ground combat element
GCI	ground control intercept

GLINT gated laser illuminator for narrow television
GPS global positioning system
HA holding area
HCS helicopter control section
HDC helicopter direction center
HE high explosive
HF high frequency
IADS Integrated Air Defense System
IDM improved data modem
IFF identification, friend or foe
INFLTREP in-flight report (voice only)
INS inertial navigation system
IP initial point
IR infrared
JAAT joint air attack team
JAOC joint air operations center
JFACC joint force air component commander
JFC joint force commander
JFSOCC joint force special operations component
commander
JMEM *Joint Munitions Effectiveness Manual*
JOC joint operations center
JSOAOA joint special operations air operations center
JTAR joint tactical airstrike request
JTTP joint tactics, techniques, and procedures
KIA killed in action
LANTIRN low-altitude navigation and targeting
infrared for night
LGB laser-guided bomb
LGM laser-guided missile
LGW laser-guided weapon
LIA laser illuminator assembly
LLTR low-level transit route
LLLTV low-light-level television

LOAL	lock-on after launch
LOAL DIR	LOAL direct
LOAL HI	LOAL high
LOAL LO	LOAL low
LOBL	lock-on before launch
LST	laser spot tracker
LTD	laser target designator
MACCS	Marine air command and control system
MAG	Marine aircraft group
MAGTF	Marine air-ground task force
MARFOR	Marine Corps forces
MARLO	Marine liaison officer
MCDP	Marine Corps doctrinal publication
MCRP	Marine Corps reference publication
MCWP	Marine Corps warfighting publication
MEF	Marine expeditionary force
METT-T	mission, enemy, terrain and weather, troops and support available, time available
MEZ	missile engagement zone
MGRS	Military Grid Reference System
MISREP	mission report
MMT	Marine air traffic control mobile team
MRR	minimum-risk route
MSL	mean sea level
NALE	naval and amphibious liaison element
NATO	North Atlantic Treaty Organization
NAVAID	navigation aid
NAVFOR	Navy forces
NCTR	noncooperative target recognition
NFA	no-fire area
NGF	naval gunfire (now known as NSFS)
NLT	not later than
NM	nautical mile
NOE	nap-of-the-earth

NSFS	naval surface fire support
NTACS	Navy tactical air control system
NVD	night vision device
NVG	night vision goggle(s)
OAS	offensive air support
OMFTS	operational maneuver from the sea
OPCON	operational control
OPORD	operation order
PGM	precision-guided munitions
PI	probability of incapacitation
PLS	personnel locator system
PP	penetration point
PRF	pulse repetition frequency
prowords	procedure words
PUP	pull-up point
RAOC	rear area operations center
RFA	restrictive fire area
RFL	restrictive fire line
RGR	rapid ground refueling
ROE	rules of engagement
RP	rendezvous point
RTF	return to force
SACC	supporting arms coordination center
SAM	surface-to-air missile
SATCOM	satellite communications
SAW	surface-to-air weapon
SEAD	suppression of enemy air defenses
SINCGARS	Single-Channel Ground and Airborne Radio System
SOCCE	special operations command and control element
SOF	special operations forces
SOI	signal operating instructions
SOLE	special operations liaison element
SOP	standing operating procedure

SORTIEALOT sortie allotment
SOTAC special operations terminal attack controller
STOM ship-to-objective maneuver
TAC(A) tactical air coordinator (airborne)
TACAN tactical air navigation
TACC tactical air command center (USMC)
 tactical air control center (USN)
TACON tactical control
TACP tactical air control party
TACS Theater Air Control System
TAD tactical air direction
TADC tactical air direction center
TAOC tactical air operations center (USMC)
TAR tactical air request
TARWI target area weather information
TATC tactical air traffic control
TERF terrain flight
TOS time on station
TOT time on target
TOW tube launched, optically tracked, wire command
 link guided missile
TRP target reference point
TTP tactics, techniques, and procedures
TTT time to target
UHF ultrahigh frequency
UNAAF Unified Action Armed Forces
USA United States Army
USAF United States Air Force
USMC United States Marine Corps
USMTF United States message text format
USN United States Navy
UTM universal transverse mercator
VHF very high frequency
VHF-AM very high frequency-amplitude modulation

VHF-FM very high frequency-frequency modulation
VID visual identification
WEZ weapons engagement zone
WP white phosphorus

Section II. Terms and Definitions

A

air operations center - The principal air operations installation from which aircraft and air warning functions of combat air operations of the Air Force Component Commander from which command and Services. Also called **AOC**.

airspace control authority - The commander designated to assume overall responsibility for the operation of the airspace control system in the airspace control area. (Joint Pub 1-02)

airspace coordination area - A three-dimensional block of airspace in a target area, established by the appropriate ground commander, in which friendly aircraft are reasonably safe from friendly surface fires. The airspace coordination area may be formal or informal. (Joint Pub 1-02)

air superiority - That degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force. (Joint Pub 1-02)

air support operations center - An agency of a tactical air control system collocated with a corps headquarters or an appropriate land force headquarters, which coordinates and directs close air support and other tactical air support. See also **tactical air control center**. (Joint Pub 1-02)

Army air-ground system - The Army system which provides for interface between Army and tactical air support agencies of other Services in the planning, evaluating, processing, and coordinating of air support requirements and operations. It is composed of appropriate staff members, including G-2 air and G-3 air personnel, and necessary communication equipment. (Joint Pub 1-02)

B

battle damage assessment - The timely and accurate estimate of damage resulting from the application of military force, either lethal or non-lethal, against a predetermined objective. Battle damage assessment can be applied to the employment of all types of weapon systems (air, ground, naval, and special forces weapon systems) throughout the range of military operations. Battle damage assessment is primarily an intelligence responsibility with required inputs and coordination from the operators. Battle damage assessment is composed of physical damage assessment, functional damage assessment, and target system assessment. Also called **BDA**. (Joint Pub 1-02)

battle position - A defensive location oriented on the most likely enemy avenue of approach from which a unit may defend or attack. Such units can be as large as reinforced battalions and as small as platoons. The unit assigned to the battle position is located within the general outline of the battle position, but other forces may operate outside the battle position to provide early detection of enemy forces and all-round security. (FMFRP 0-14)

C

close air support - Air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces. Also called **CAS**. See also **immediate mission request; preplanned mission request**. (Joint Pub 1-02)

command and control - The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called **C2**. (Joint Pub 1-02)

contact point - 1. (DOD, NATO) In land warfare, a point on the terrain, easily identifiable, where two or more units are required to make contact. 2. (DOD, NATO) In air operations, the position at which a mission leader makes radio contact with an air control agency. 3. (DOD) In evasion and recovery operations, a location where an evader can establish contact with friendly forces. (Joint Pub 1-02)

D

direct air support center - The principal air control agency of the U.S. Marine air command and control system responsible for the direction and control of air operations directly supporting the ground combat element. It processes and coordinates requests for immediate air support and coordinates air missions requiring integration with ground forces and other supporting arms. It normally

collocates with the senior fire support coordination center within the ground combat element and is subordinate to the tactical air command center. Also called **DASC**. See also **Marine air command and control system; tactical air command center; tactical air operations center**. (Joint Pub 1-02)

direct support - A mission requiring a force to support another specific force and authorizing it to answer directly the supported force's request for assistance. See also **general support**. (Joint Pub 1-02)

E

electronic warfare - Any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Also called EW. The three major subdivisions within electronic warfare are electronic attack, electronic protection, and electronic warfare support. a. electronic attack. That division of electronic warfare involving the use of electromagnetic, directed energy, or antiradiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability. Also called EA. EA includes: (1) actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, such as jamming and electromagnetic deception, and (2) employment of weapons that use either electromagnetic or directed energy as their primary destructive mechanism (lasers, radio frequency weapons, particle beams, antiradiation weapons). b. electronic protection. That division of electronic warfare involving actions taken to protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability. Also called EP. c. electronic warfare support. That division of electronic warfare involving actions tasked

by, or under direct control of, an operational commander to search for, intercept, identify, and locate sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition. Thus, electronic warfare support provides information required for immediate decisions involving electronic warfare operations and other tactical actions such as threat avoidance, targeting, and homing. Also called ES. Electronic warfare support data can be used to produce signals intelligence, both communications intelligence, and electronics intelligence. See also **suppression of enemy air defenses**. (Joint Pub 1-02)

F

fire support coordination measure - A measure employed by land or amphibious commanders to facilitate the rapid engagement of targets and simultaneously provide safeguards for friendly forces. See also **supporting arms coordination center**. (Joint Pub 1-02.)

fire support coordination center - A single location in which are centralized communications facilities and personnel incident to the coordination of all forms of fire support. See also **supporting arms coordination center**. (Joint Pub 1-02)

fire support coordination line - A line established by the appropriate land or amphibious force commander to ensure coordination of fire not under the commander's control but which may affect current tactical operations. The fire support coordination line is used to coordinate fires of air, ground, or sea weapons systems using any type of ammunition against surface targets. The fire support coordination line should follow well-defined terrain features. The establishment of the fire support coordination line must be coordinated with the appropriate tactical air commander and other supporting elements. Supporting elements may attack targets forward

of the fire support coordination line without prior coordination with the land or amphibious force commander provided the attack will not produce adverse surface effects on or to the rear of the line. Attacks against surface targets behind this line must be coordinated with the appropriate land or amphibious force commander. Also called **FSCL**. (Joint Pub 1-02)

forward air controller - An officer (aviator/pilot) member of the tactical air control party who, from a forward ground or airborne position, controls aircraft in close air support of ground troops. (Joint Pub 1-02)

forward air controller (airborne) - A specifically trained and qualified aviation officer who exercises control from the air of aircraft engaged in close air support of ground troops. The forward air controller (airborne) is normally an airborne extension of the tactical air control party. Also called **FAC(A)**. (Joint Pub 1-02)

forward arming and refueling point - A temporary facility, organized, equipped, and deployed by an aviation commander, and normally located in the main battle area closer to the area of operation than the aviation unit's combat service area, to provide fuel and ammunition necessary for the employment of aviation maneuver units in combat. The forward arming and refueling point permits combat aircraft to rapidly refuel and rearm simultaneously. Also called **FARP**. (Joint Pub 1-02)

forward looking infrared - An airborne, electro-optical thermal imaging device that detects far-infrared energy, converts the energy into an electronic signal, and provides a visible image for day or night viewing. Also called **FLIR**. (Joint Pub 1-02) See **night vision device**.

forward operating base - An airfield used to support tactical operations without establishing full support facilities. The base may be used for an extended time period. Support by a main operating base will be required to provide backup support for a forward operating base. Also called **FOB**. (Joint Pub 1-02)

G

general support - (DOD, NATO) That support which is given to the supported force as a whole and not to any particular subdivision thereof. (Joint Pub 1-02) See also **direct support**.

H

holding point - A geographically or electronically defined location used in stationing aircraft in flight in a predetermined pattern in accordance with air traffic control clearance. See also **orbit point**. (Joint Pub 1-02)

I

immediate air support - Air support to meet specific requests which arise during the course of a battle and which by their nature cannot be planned in advance. (Joint Pub 1-02)

immediate mission request - A request for an airstrike on a target which, by its nature, could not be identified sufficiently in advance to permit detailed mission coordination and planning. See also **preplanned mission request**. (Joint Pub 1-02)

infrared pointer - A low power laser device operating in the near infrared light spectrum that is visible with light amplifying night vision devices. Also called **IR pointer**. (Joint Pub 1-02)

initial point - 1. The first point at which a moving target is located on a plotting board. 2. A well-defined point, easily distinguishable visually and/or electronically, used as a starting point for the bomb run to the target. 3. airborne—A point close to the landing area where serials (troop carrier air formations) make final alterations in course to pass over individual drop or landing zones. 4. helicopter—An air control point in the vicinity of the landing zone from which individual flights of helicopters are directed to their prescribed landing sites. 5. Any designated place at which a column or element thereof is formed by the successive arrival of its various subdivisions, and comes under the control of the commander ordering the move. (Joint Pub 1-02)

J

joint force commander - A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called **JFC**. (Joint Pub 1-02)

M

Marine air command and control system - A system which provides the aviation combat element commander with the means to command, coordinate, and control all air operations within an assigned sector and to coordinate air operations with other Services. It is composed of command and control agencies with

communications-electronics equipment that incorporates a capability from manual through semiautomatic control. Also called **MACCS**. See also **direct air support center**, **tactical air command center**; **tactical air operations center**. (Joint Pub 1-02)

N

naval surface fire support - Fire provided by Navy surface gun, missile, and electronic warfare systems in support of a unit or units tasked with achieving the commander's objectives. Also called **NSFS**. (Joint Pub 1-02)

night vision device - Any electro-optical device that is used to detect visible and infrared energy and provide a visible image. Night vision goggles, forward-looking infrared, thermal sights, and low-light-level television are night vision devices. Also called **NVD**. See also **night vision goggle(s)**; **forward-looking infrared**. (Joint Pub 1-02)

night vision goggle(s) - An electro-optical image intensifying device that detects visible and near-infrared energy, intensifies the energy, and provides a visible image for night viewing. Night vision goggles can be either hand-held or helmet-mounted. Also called **NVG**. See also **night vision device**. (Joint Pub 1-02)

O

offensive air support - Those air operations conducted against enemy installations, facilities, and personnel to directly assist the attainment of MAGTF objectives by the destruction of enemy resources or the isolation of his military force. (FMFRP 0-14)

orbit point - A geographically or electronically defined location used in stationing aircraft in flight during tactical operations when a predetermined pattern is not established. See also **holding point**. (Joint Pub 1-02)

P

preplanned air support - Air support in accordance with a program, planned in advance of operations. See **close air support**. (Joint Pub 1-02)

preplanned mission request - A request for an airstrike on a target which can be anticipated sufficiently in advance to permit detailed mission coordination and planning. (Joint Pub 1-02) See **close air support**.

R

reasonable assurance - During each close air support mission, an acceptable level of risk under which the supported ground commander allows aircrew to attack targets and release ordnance without positive control. See **fire support coordination center**. (MCRP 5-2C draft)

S

supporting arms coordination center - A single location on board an amphibious command ship in which all communication facilities incident to the coordination of fire support of the artillery, air, and naval gunfire are centralized. This is the naval counterpart to the fire support coordination center utilized by the landing force.

See **fire support coordination center; fire support coordination measure.** (Joint Pub 1-02)

suppression of enemy air defenses - That activity which neutralizes, destroys, or temporarily degrades surface-based enemy air defenses by destructive and/or disruptive means. Also called **SEAD.** See also **electronic warfare.** (Joint Pub 1-02)

synchronized clock - A technique of timing the delivery of fires by placing all units on a common time. The synchronized clock uses a specific hour/minute based on either local or universal time. Local time is established using the local time zone. (Joint Pub 1-02)

T

tactical air command center - The principal U.S. Marine Corps air command and control agency from which air operations and air defense warning functions are directed. It is the senior agency of the U.S. Marine air command and control system which serves as the operational command post of the aviation combat element commander. It provides the facility from which the aviation combat element commander and his battlestaff plan, supervise, coordinate, and execute all current and future air operations in support of the Marine air-ground task force. The tactical air command center can provide integration, coordination, and direction of joint and combined air operations. Also called **Marine TACC.** See also **direct air support center; Marine air command and control system; tactical air operations center.** (Joint Pub 1-02)

tactical air control center - The principal air operations installation (ship-based) from which all aircraft and air warning functions of tactical air operations are controlled. Also called **Navy TACC.** (Joint Pub 1-02) See **air support operations center.**

tactical air control party - A subordinate operational component of a tactical air control system designed to provide air liaison to land forces and for the control of aircraft. (Joint Pub 1-02)

tactical air coordinator (airborne) - An officer who coordinates, from an aircraft, the action of combat aircraft engaged in close support of ground or sea forces. (Joint Pub 1-02)

tactical air direction center - An air operations installation under the overall control of the tactical air control center (afloat)/tactical air command center, from which aircraft and air warning service functions of tactical air operations in an area of responsibility are directed. (Joint Pub 1-02)

tactical air operations center - The principal air control agency of the U.S. Marine air command and control system responsible for airspace control and management. It provides real time surveillance, direction, positive control, and navigational assistance for friendly aircraft. It performs real time direction and control of all anti-air warfare operations, to include manned interceptors and surface-to-air weapons. It is subordinate to the tactical air command center. Also called **TAOC**. (Joint Pub 1-02) See **Marine air command and control system**.

terminal control - 1. The authority to direct the maneuver of aircraft which are delivering ordnance, passengers, or cargo to a specific location or target. Terminal control is a type of air control. 2. Any electronic, mechanical or visual control given to aircraft to facilitate target acquisition and resolution. (Joint Pub 1-02)

thermal crossover - The natural phenomenon which normally occurs twice daily when temperature conditions are such that there

is a loss of contrast between two adjacent objects on infrared imagery. (Joint Pub 1-02)

time on target - 1. Time at which aircraft are scheduled to attack/photograph the target. 2. The actual time at which aircraft attack/photograph the target. 3. The time at which a nuclear detonation is planned at a specified desired ground zero. (Joint Pub 1-02)

time to target - The number of minutes and seconds to elapse before aircraft ordnance impacts on target. (Joint Pub 1-02)